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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/895,578	06/29/2001	Robert J. Royer JR.	42390P11447	6935

8791 7590 12/15/2004

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EXAMINER	
PORTKA, GARY J	

ART UNIT	PAPER NUMBER
2188	

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/895,578	ROYER ET AL..	
	Examiner	Art Unit	
	Gary J Portka	2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 September 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *09/07/04*. ₵ 09/17/04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1, 7, 10, 13, 16, 22, and 27 have been amended by Applicant. Claims 1-44 are pending.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on September 7, 2004 was considered by the examiner. The IDS submitted September 17, 2004 is a duplicate and was not considered.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5, 7-9, 12-15, 17-29, 31-33, and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Kurzawa et al., WO 93/21579.

5. As to claims 1, 7, 13, 18, 22, 27 and 31, Kurzawa discloses a method, non-volatile memory, system, and program comprising partitioning a non-volatile storage media, storing data in a first section and metadata corresponding to the data in a second section (see Abstract, Figs. 1 and 2, page 3 lines 1-8, page 3 line 33 to page 4 line 4, page 6 line1 to page 9 line 8 in general, and in particular page 8 lines 5-8 and 16-

21; since the NVM directory 150 is allocated only as needed it may be considered partitioned along with table 140 with respect to the data buffer area 160). The limitation of accessing the second partition upon/in a system boot is inherent since the system is for the purpose of retaining data in the event of power failure (see page 1 lines 20-25). The processor is at 110, the hub is the controlling circuitry of 130.

6. As to claims 2-5, 8-9, 12, 14-15, 17, 19-21, 23-26, 28-29, 32-33, and 35, all limitations are considered disclosed in or inherent to the sections of Kurzawa cited above

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 6, 10-11, 16, 30, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurzawa et al., WO 93/21579, in view of Forehand et al., U.S. Patent 6,516,426 B1.

9. As to claims 6, 10-11, 16, 30, and 34, Kurzawa does not disclose the non-volatile cache as part of a mass storage device. However, it was known in the art to implement a part of a mass storage device as a non-volatile cache. Forehand teaches that storing data in a non-volatile manner is required to avoid loss of data (see col. 1 lines 43-49), and that the expense and control issues of other non-volatile caching techniques are solved by an on-disk caching technique (see col. 2 lines 4-34). Thus it would have been

obvious to one of ordinary skill in the art at the time of the invention to have the non-volatile cache as part of a mass storage device, because this was previously known as a less expensive and easier controlled method of avoiding the loss of data.

10. Claims 36-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurzawa et al., WO 93/21579, in view of Chen, U.S. Patent 6,025,618.

11. Claims 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurzawa et al., WO 93/21579, in view of Forehand et al., U.S. Patent 6,516,426 B1, and further in view of Chen, U.S. Patent 6,025,618.

12. As to claims 36-40, Kurzawa substantially discloses the claim limitations, and as to claims 41-44 the Kurzawa-Forehand prior art combination substantially discloses the claim limitations as described above. Neither Kurzawa nor Forehand disclose that the non-volatile memory is, or is coupled to, a polymer ferroelectric memory. However, polymer ferroelectric memory and its advantages were known in the art at the time (as admitted by Applicant in their response to the previous 35 USC 112 rejection). Chen teaches that such memory combines the advantages of non-volatility with the access speed of DRAM (see col. 1 lines 9-25, col. 2 lines 20-32, col. 5 lines 5-7, and col. 6 lines 60-67). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use a polymer ferroelectric memory, because this was previously known to combine the advantages of non-volatility and high speed.

Response to Arguments

13. Applicant's arguments filed September 7, 2004 have been fully considered but they are not persuasive.

14. Applicant argues that Kurzawa does not teach reading memory 130 during a system boot. This argument is not supported by the claim language. Claims 1 and 7 recite "upon" a system boot. Examiner maintains that the recited area must be accessed "upon" a system boot, because that area is used for fault recovery after a boot, and any access that occurs after a boot may be interpreted as occurring "upon" a boot. Claims 18, 22, 27, and 31 recite "in" a system boot. Examiner maintains this rejection as well because a system boot after a fault or crash typically includes a fault recovery period, and this fault recovery in Kurzawa, which must access the area in question, may be considered "in" the boot.

15. Applicant argues that a memory control hub causing first section to store data and second to store metadata, and processor coupled thereto, is not taught. Since these functions are taught as previously described with regard to claim 1, Examiner maintains that the hub as recited is disclosed. The hub is further described hereinabove as the controlling circuitry of 130.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary J Portka whose telephone number is (703) 305-4033. The examiner can normally be reached on M-F 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (703) 306-2903. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gary J Portka
Primary Examiner
Art Unit 2188

December 11, 2004